

**March 8, 2017**

**MEMORANDUM**

To: Jenny Filipy, Ecology  
cc: Laura Verity, Ponderay

From: Michael Schultz

Project Name: Ponderay Chipper Project

Subject: Particulate Matter Concentration Isopleths

This memorandum presents figures summarizing the ambient air concentrations of particulate matter due to the Ponderay Chipper Project. Ponderay Newsprint Company (PNC) operates a pulp and paper facility located at 422767 Highway 20 in Usk, Washington. The facility converts wood (in the form of chips) and recycled material into paper pulp and ultimately into finished newsprint. PNC submitted a Notice of Construction (NOC) application to the Washington Department of Ecology (Ecology) proposing to install an electric log debarker and chipper at the facility.

As part of the New Source Review analyses included in the application, Ramboll Environ applied atmospheric modeling techniques to simulate dispersion of particulate matter less than 10 microns in diameter (PM<sub>10</sub>) and particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>) emissions from the Project. Details of the model, methods, assumptions, and data used in the analyses were included in the NOC application. The results of the cumulative modeling analysis (which includes the maximum potential to emit from the Project and all other facility-wide particulate matter emission sources) are summarized the following table and figures.

<b>Table 1: Predicted Facility-Wide Design Concentrations</b>						
<b>Pollutant</b>	<b>Averaging Period</b>	<b>Concentration (µg/m<sup>3</sup>)</b>			<b>NAAQS/ WAAQS<sup>4</sup> (µg/m<sup>3</sup>)</b>	<b>Over AAQS?</b>
		<b>Design<sup>1</sup></b>	<b>Background<sup>2</sup></b>	<b>Total<sup>3</sup></b>		
PM <sub>10</sub>	24-Hour	51.0	78	129	150	No
PM <sub>2.5</sub>	24-Hour	5.8	14	19.8	35	No
	Annual	0.99	4.9	5.9	12	No

1. Design concentrations are the highest 6<sup>th</sup>-high 24-hour average PM<sub>10</sub> concentration over five modeled years, the highest 5-year average of the 98<sup>th</sup> percentile 24-hour average PM<sub>2.5</sub> concentrations at each receptor, and the highest 5-year average of the annual average PM<sub>2.5</sub> concentrations at each receptor (based on guidance in the "Modeling Procedures for Demonstrating Compliance with the PM<sub>2.5</sub> NAAQS" memorandum issued on March 23, 2010 by Stephen Page, Director of OAQPS).

2. The background concentrations were obtained from the Washington State University Northwest International Air Quality Environmental Science and Technology Consortium website. <http://lar.wsu.edu/nw-airquest/lookup.html>. Accessed September 2016.

3. Total concentration is the sum of the design concentration and the background concentration.

4. WAC 173-476 aligns the Washington Ambient Air Quality Standards (WAAQS) for PM<sub>10</sub>, and PM<sub>2.5</sub> with the National Ambient Air Quality Standards (NAAQS). As a result, the WAAQS and NAAQS for PM<sub>10</sub>, and PM<sub>2.5</sub> are identical.

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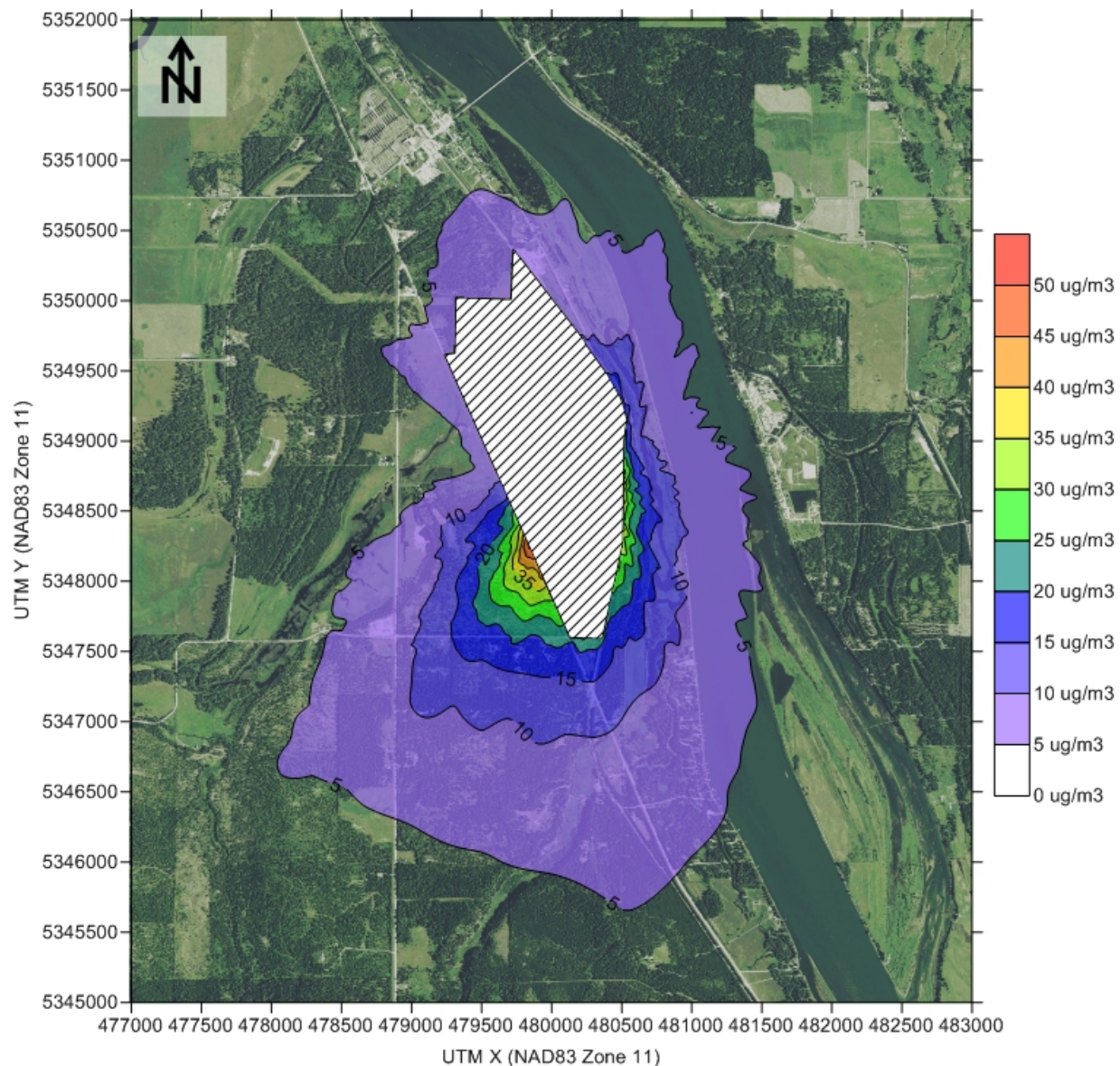
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As shown in the table, the model-predicted design concentration, with a representative background concentration added, is less than the applicable ambient standards in all cases.

Ecology has requested isopleth plots of the modeling data to visually understand the location of the highest concentrations due to facility-wide particulate matter emission rates. The following figures present the 24-hour design concentration isopleths (for PM<sub>10</sub> and PM<sub>2.5</sub>) and the annual design concentration isopleths (PM<sub>2.5</sub>). The figures do not include the background concentrations (which are listed in Table 1).

Figure 1: PM<sub>10</sub> 24-hour Design Concentration Isopleths





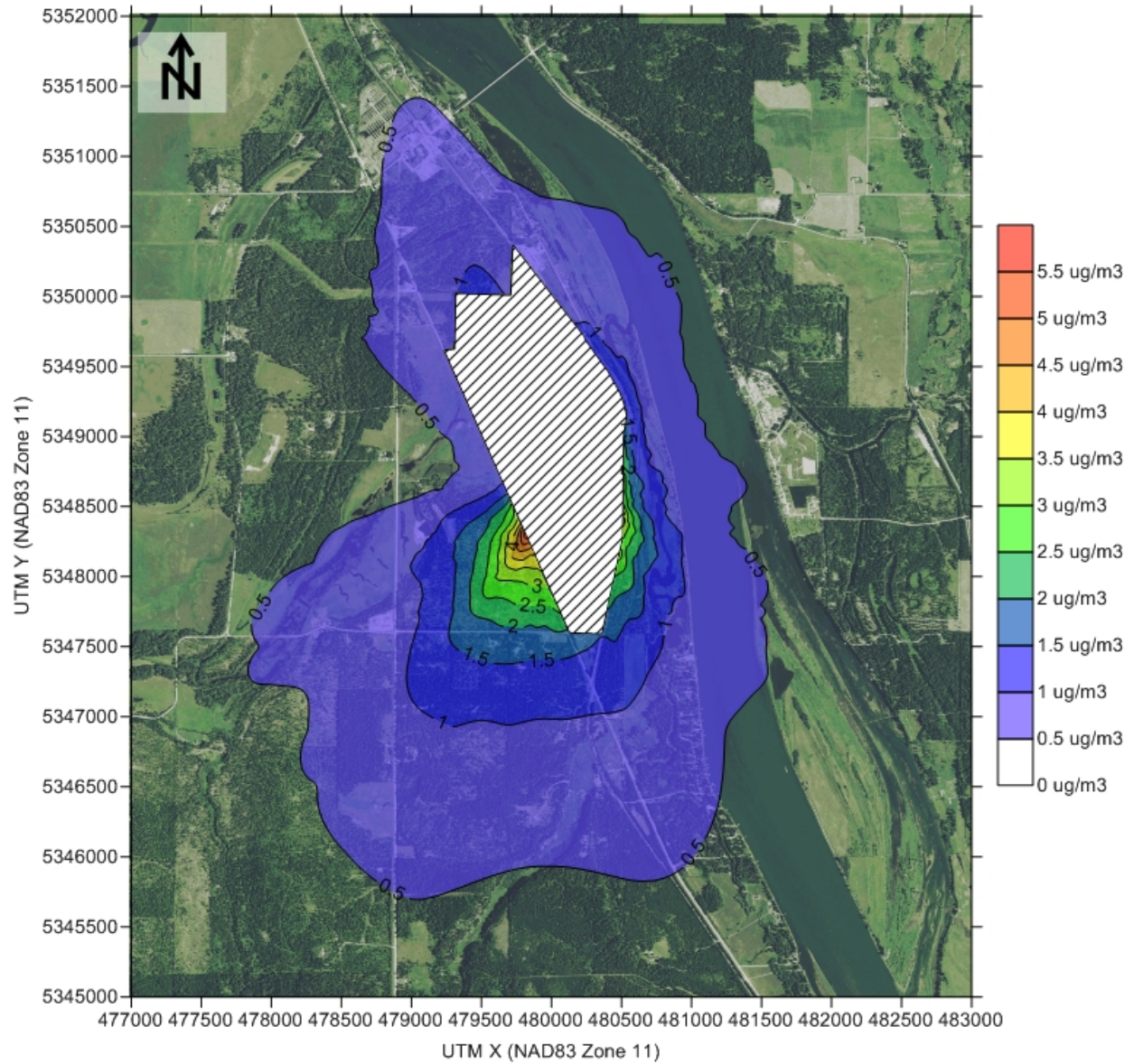
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Figure 2: PM<sub>2.5</sub> 24-hour Design Concentration Isopleths



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Figure 3: PM<sub>2.5</sub> Annual Design Concentration Isopleths

